

WHAT IS CLAIMED IS:

1. An implantable cardioverter defibrillator (ICD) system for applying electric shock to a heart of a patient, the ICD system comprising:  
a quasi-Faraday cage including only a single electrode;  
wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least about 50% of the heart during application of electric shock to the heart, so that electric shock is adapted to be applied to the heart between the quasi-Faraday cage and an electrode of the ICD adapted to be located inside of the heart to make the shock less painful as a significant portion of a defibrillation shock field is confined to the heart itself so as to prevent the shock from significantly stimulating extracardiac tissue.
2. The ICD system of claim 1, wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least 60% of the heart during application of electric shock to the heart.
3. The ICD system of claim 1, wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least 70% of the heart during application of electric shock to the heart.
4. An implantable cardioverter defibrillator (ICD) system for applying electric shock to a heart of a patient, the ICD system comprising:  
a quasi-Faraday cage including only a single electrode;

wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least about 50% of the heart during application of electric shock to the heart, so as to make the shock less painful as a significant portion of a defibrillation shock field is confined to the heart itself thereby preventing the shock from significantly stimulating extracardiac tissue.

5. The ICD system of claim 4, wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least 60% of the heart during application of electric shock to the heart.

6. The ICD system of claim 4, wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around at least 70% of the heart during application of electric shock to the heart.

7. The ICD system of claim 4, wherein the quasi-Faraday cage is not an active element in a shock circuit which applies the shock to the heart.

8. An implantable cardioverter defibrillator (ICD) system for applying electric shock to a heart of a patient, the ICD system comprising:

a quasi-Faraday cage including only a single electrode;

wherein the single electrode of the quasi-Faraday cage is adapted to be wrapped around a significant portion of the heart during application of electric

shock to the heart, so that electric shock is adapted to be applied to the heart between the quasi-Faraday cage and an electrode of the ICD adapted to be located inside of the heart to make the shock less painful as a significant portion of a defibrillation shock field is confined to the heart itself so as to prevent the shock from significantly stimulating extracardiac tissue.

9. The ICD system of claim 8, wherein the single electrode of the quasi-Faraday cage comprises a mesh of conductor provided on or in a flexible fabric.

10. The ICD system of claim 1, wherein the electrode of the quasi-Faraday cage is used to perform a heart pacing function to alter ventricular activation sequence and improve cardiac function.

11. The ICD system of claim 1, wherein said quasi-Faraday cage squeezes heart muscle that it is wrapped around in order to improve cardiac function.

12. An implantable cardioverter defibrillator (ICD) system for applying electric shock to a heart of a patient, the ICD system comprising:  
a quasi-Faraday cage including electrodes;

wherein electrodes of the quasi-Faraday cage are adapted to be wrapped around at least about 60% of the heart during application of the electric shock so that electric shock is adapted to be applied to the heart between the quasi-Faraday cage and an electrode of the ICD adapted to be located inside of the heart to make the shock less painful as a significant portion of a defibrillation shock field is confined to the heart itself so as to prevent the shock from significantly stimulating extracardiac tissue; and

wherein the quasi-Faraday cage at least one of: (a) performs a heart pacing function to alter ventricular activation sequence and improve cardiac function, and (b) squeezes heart muscle that it is wrapped around in order to improve cardiac function.

13. An implantable cardioverter defibrillator (ICD) system for applying electric shock to a heart of a patient, the ICD system comprising:

a quasi-Faraday cage including a plurality of electrodes;

wherein electrodes of the quasi-Faraday cage is adapted to be wrapped around a significant portion of the heart during application of electric shock to the heart, so that electric shock is adapted to be applied to the heart between the quasi-Faraday cage and an electrode of the ICD adapted to be located inside of the heart to make the shock less painful; and

means for adjusting current density applied to a plurality of said electrodes of said quasi-Faraday cage, so that different currents flow through different electrodes of the quasi-Faraday cage.